

REMARKS

The above amendments and these remarks are responsive to the Office Action issued on June 30, 2006. No new matter is added. Claims 1-20 are now active for examination.

The Office Action allowed claims 8-9 and 15. Claims 1-4, 6, 12-14 and 17-20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Jitsukata, et al. (6,169,940) in view of Gan et al. (5,835,880). Claims 5 and 7 were rejected under 35 U.S.C. §103(a) as being unpatentable over Jitsukata et al. and Gan et al. and further in view of Taguchi et al. Claims 10 and 16 stood rejected under 35 U.S.C. §103(a) as being upatentable over Jitsukata et al. in view of Gan et al. and Barrett et al.(5,331,561). Claim 11 was rejected under 35 U.S.C. §103(a) as being unpatentable over Jitsukata et al., Gan et al. and Barrett et al. as applied to claim 10 above, and further in view of Taguchi et al. It is respectfully submitted that the claim rejections are overcome in view of the remarks presented herein.

The Obviousness Rejection of Claims 1-4, 6, 12-14 and 17-20 Is Overcome

Claims 1-4, 6, 12-14 and 17-20 were rejected as being unpatentable over Jitsukata in view of Gan. It is submitted that the obviousness rejection is overcome because Jitsukata and Gan cannot support a *prima facie* case of obviousness.

Claim 1 describes an information providing device installed in a leader vehicle that leads a follower vehicle, such that the driver of the follower vehicle may effectively follow the leader vehicle using the information provided by the claimed device. The device includes a state detector configured to detect a state change in the leader vehicle and output a detecting signal. A guidance generator is provided to prepare guidance to guide the follower vehicle. The guidance includes a photographed image of a view ahead of the leader vehicle, and additionally,

information of a state change of the leader vehicle is overlaid on the photographed image, such as direction arrow 603 in Fig. 5 showing the direction change of the leader vehicle.

For instance, the claimed invention is useful when multiple vehicles are heading toward the same destination, and one of the drivers is familiar with a route to the destination and leads other vehicles. The claimed invention allows the leader vehicle to provide guidance to other follower vehicles. A system according to the invention provides a driver of a follower vehicle with guidance for guiding the follower vehicle. The guidance is a photographed image of a view a head of the leader vehicle and information of the state change overlaid on the photographed image upon receiving the detecting signal.

The Office Action correctly acknowledged that Jitsukata fails to disclose “information of [a] state change overlaid on the photographed image,” as described in claim 1. However, the Office Action erred in alleging that Jitsukata *implicitly* suggests the missing feature because Jitsukata discusses “vehicle to vehicle communication including ‘deceleration running signal’ and image processing ECU 12.” The Office Action erroneously concluded that it would have been obvious to one of ordinary skill in the art that Jitsukata would overlay a state change, such as the deceleration running signal, on a photographed image, by sending the deceleration running signal to image processing ECU 12. It is respectfully pointed out that such conclusion is baseless and in contrary to the disclosure of Jitsukata.

Jitsukata relates to an automatic driving system that controls the driving of a vehicle to follow target running trajectories. Since automatic driving is the purpose of Jitsukata’s disclosure, **no** human driver intervention is needed. Accordingly, images acquired by Jitsukata’s CCD are **not** used by the driver to follow a leader vehicle. There would be no specific

motivation to modify Jitsukata such that information of a state change of the leader vehicle is overlaid on the photographed image, to guide a human driver to follow a leader vehicle.

Jitsukata's own descriptions further support the lack of motivation to modify:

Referring specifically to FIG. 3, the total plan ECU 13 determines whether it has received a vehicle leading signal indicating that this vehicle equipped with the total plan ECU 13 is a vehicle running at the top of a vehicle group (hereinafter referred to as the "leading vehicle") by a setting operation of a driver through an input device such as a keyboard, not shown, and stored the vehicle leading signal in a predetermined memory (not shown) in the total plan ECU 13 (step \$1).

See col. 4, Ins. 6-16 of Jitsukata.

A vehicle navigation signal is formed on the basis of the target running trajectory output by the processing of the total plan ECU 13 so far described, and the resultant vehicle navigation signal is supplied to the vehicle control ECU 23. The vehicle control ECU 23 outputs control signals to a throttle actuator, a brake actuator and a steering actuator, not shown, respectively, to automatically drive the vehicle.

See col. 6, Ins. 50-56 of Jitsukata.

As described above, the subsequent vehicle 9 sets a target running trajectory suitable therefore based on a running course 10 set by the leading vehicle 8, and performs automatic navigation along the target running trajectory. It is therefore possible to trace a smooth running trajectory along a lane without depending on the position of the aforementioned lane markers.

See col. 7, Ins. 34-40 of Jitsukata.

Since Jitsukata's system does not require interventions from a human driver, there is no specific motivation to provide an image with overlaid state information to allow a user to easily perceive the changes of a leader vehicle.

The other cited reference, Gan, also relates to automatic vehicle driving. A pair of video cameras is mounted on the front portion of a following vehicle, and each camera generates image data indicative of a respective image of a distinctive mark located on a rearward portion of a lead vehicle. According to Gan et al., a mark 14 is mounted into the lead vehicle, and a following vehicle 16 includes a pair of cameras 18 mounted on the front end of the vehicle for detecting the

mark 14. The apparatus equipped in following vehicle receives the image data of the mark 14, and based on such data, generates signals indicative of the following distance, heading angle of the lead vehicle for performing automatic driving. Although the image data may be used to derive parameters, such as a heading angle or a following distance, these parameters are used in the data processing for automatic driving. There is no specific motivation supplied by Gan et al to provide “information of the state change overlaid on the photographed image,” as described in claim 1.

Since neither Jitsukata nor Gan provides the prerequisite motivation to modify the cited reference to provide “information of the state change overlaid on the photographed image,” as described in claim 1, Jitsukata and Gan, even if combined, do not disclose “a guidance generator configured to prepare, in response to the detecting signal, the guidance to guide the follower vehicle, wherein the guidance includes a photographed image of a view ahead of the leader vehicle and information of the state change overlaid on the photographed image,” as described in claim 1. Consequently, the obviousness rejection base on Jitsukata and Gan is untenable and should be withdrawn. Favorable reconsideration of claim 1 is respectfully requested.

Claims 2-4 and 6, directly or indirectly, depend on claim 1 and incorporate every limitation thereof. Therefore, claims 2-4 and 6 also are patentable by virtue of their dependencies from claim 1.

Claims 12-14, like claim 1, include features related to preparing guidance to guide a follower vehicle, wherein the guidance includes a photographed image of a view ahead of the leader vehicle and information of the state change overlaid on the photographed image. Therefore, claims 12-14 are patentable over the cited documents for at least the same reasons as

for claim 1, as well as based on their own merits. Favorable reconsideration of claims 12-14 is respectfully requested.

The Obviousness Rejection of Claims 5 and 7 Is Overcome

Claim 5 and 7 were rejected as being unpatentable over Jitsukata in view of Ran and Taguchi. The obviousness rejection is respectfully traversed because Jitsukata and Taguchi cannot support a prima facie case of obviousness.

Claims 5 and 7 depend on claim 1 and incorporate every limitation thereof. As discussed earlier, Jitsukata and Gan cannot support a prima facie case of obviousness. The other cited document, Taguchi, does not alleviate the deficiencies.

The Obviousness Rejection of Claims 10 and 16 Is Overcome

Claims 10 and 16 were rejected as being unpatentable over Jitsukata in view of Gan and Barrett. It is respectfully submitted that the obviousness rejection of claims 10 and 16 is overcome because Jitsukata, Gan and Barrett cannot support a prima facie case of obviousness.

Claims 10 and 16, like claim 1, includes features related to generating guidance including a photographed image of a view ahead of a leader vehicle and information of a state change of the leader vehicle overlaid on the photographed image. As discussed relative to claim 1, Jitsukata and Gan do not disclose these features. Barrett, the other document cited in the Office Action, was relied on for its purported discussion of a history detector for detecting a running history of the follower vehicle. However, similar to Jitsukata, Barrett fails to disclose features related to generating guidance including a photographed image of a view ahead of a leader vehicle and overlaying information of a state change of the leader vehicle on the photographed

image. Accordingly, Jitsukata, Gan and Barrett, even if combined, do not disclose every limitation of claims 10 and 16, and hence cannot support a *prima facie* case of obviousness. The obviousness rejection is untenable and should be withdrawn. Favorable reconsideration of claims 10 and 16 is respectfully requested.

The Obviousness Rejection of Claim 11 Is Overcome

Claim 11 depends on claim 10 and incorporates every limitation thereof. As discussed earlier, Jitsukata, Gan, Taguchi and Barrett, either combined or alone, do not disclose features related to generating guidance including a photographed image of a view ahead of a leader vehicle and overlaying information of a state change of the leader vehicle on the photographed image, as described in claim 10. Accordingly, claim 11 is patentable over the combination of Jitsukata, Taguchi and Barrett. Favorable reconsideration of claim 10 is respectfully requested.

CONCLUSIONS

For the reasons given above, Applicants believe that this application is in condition for allowance, and request that the Examiner give the application favorable reconsideration and permit it to issue as a patent. If the Examiner believes that the application can be put in even better condition for allowance, the Examiner is invited to contact Applicants' representatives listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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